Yayoi Culture in the Context of World History

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Makoto Sahara

Nara National Cultural Properties Research Institute

Nara, Japan

Today, I would like to talk about two major aspects of the Yayoi culture of protohustoric Japan--subsistence and warfare. The subsistence during the Yayoi Period [ca. 400 B.C.-ca. A.D. 300]and after was primarily based on rice cultivation, as opposed to the preceding Jomon Period [ca. 10,000 B.C.-ca. 400 B.C.]which was characterized by the food gathering economy. My discussion of the rice cultivation and warfare is in the context of world history up until the present, because I strongly believe that the studies of archaeology should contribute not only to reconstructing and explaining the past, as defined by its name ["archaeo" means "old" and logos meaning "study"], but also to understanding the present situations. I hope to touch upon a few archaeological issues which are relevant to our current social concern at the end of my talk.

In order to put the Yayoi culture into the framework of world history, I want to introduce the concept of "ancientization", by which I mean the process to get into the ancient history characterized by social stratification. It is the process that the accumulation of wealth, which is greatly facilitated by the reliance on the food producing economy, eventually leads to the appearance of authoritative chiefs on whom the wealth was concentrated.[3] Using this concept, we can say that Japan achieved the ancientization very rapidly. While the Jomon Period characterized by the food gathering economy lasted unusually long, the Japanese society developed the class of influential chiefs within a matter of no more than 600 to 700 years, once the life as agriculturalists started at the beginning of the Yayoi Period [ca. 400, B.C.]. These chiefs' strong authority is reflected by the enormous size of keyhole shaped burial mounds of, for example, 480 meters in length. This quite rapid ancientization, which I think would distinguish the prehistory and protohistory of Japan from other areas, was possible because the highly advanced and complex civilizations in China and Korea became the model of the early Japanese society and culture, and also because these neighbors were the potential threat with which Japan had to deal. Other important ractors which accelerated the ancientization of Japan were the high productivity of the food gathering economy in the Jomon Period and the affluence of the Yayoi culture characterized by rice cultivation.

Based on the excavation results of more than rwenty rice paddy sites dated to the Yayoi Period in Japan, a few researchers, such as Botanist WATABE Tadayo[4] and Archaeologist TERASAWA Kaoru[5], estimate that the rice yield was very low, such as 100 kilograms at most per 100 square meters, in comparison to a 500 kilogram in the average yield for the same area in 1984. In addition, while there are 168 Yayoi sites where acorns have been discovered, there are only 128 sites where the discoveries of rice grains have been reported. However, this is not an acceptable comparison because acorns are much larger than rice grains and far easier for excavators to recover. Although archaeologists ofren discover many storage pits filled with nuts at Yayoi sites, it is possible to interpret that acorns were saved for the possible shortage of rice.

The low estimate of the rice yield and the frequent discoveries of acorns lead a few archaeologists such as TERASAWA[6] to the interpretation that the people at the beginning of the Yayoi Period primarily relied on non-rice starch. Even in the Middle Yayoi (around the time of Christ), they claim, 50% of the diet depended on non-rice starch, and at least 30% toward the end of the Yayoi Period (around 300, A.D.). I want to argue, however, the rapid ancientization could not have been achieved without enough rice. In other words, I believe that the Yayoi people ate more rice than these scholars interpret.

Besides rice, it has recently become apparent that people kept pigs during the Yayoi Period. It is also historically known that there were pigs in the Nara Period [A.D. 710-794]. Between the ninth and sixteenth/ seventeenth centuries, however, there is no evidence that the Japanese agriculturalists kept pigs. Similarly, while there were domestic fowls in the Yayoi Period, it was not until the Edo Period [1600-1868]that Japanese people ate chicken and eggs for food. Despite the presence of pigs and domestic fowls, the Japanese agriculture has developed without livestock for meat and milk, which is quite distinguished from agricultural practices of other regions of the world. The fact that the Japanese people have heavily depended upon plant food since the Jomon Period results in the appetite of the majority of the Japanese over 40 from oily food to light, slightly seasoned food.

Another important aspect of the ancientization is warfare, which also features the Yayoi culture[7]. Among hunter-gatherers in general, wars in which numerous people are killed very rarely break out. The basic reasons are that hunter-gatherers have not accumulated enough wealth, which would be an economic cause for conflicts, and that their magic and religion have not developed to the extent that these ideological aspects of their society would be a cause for the conflicts, as some ethnologists claim[8]. The only exception for this is the Northwest Coast Indians of North America[9]. The Jomon people, though as affluent as the Northwest Coast Indians, did not engage in wars. They occasionally diverted axes for cutting down trees and bows and arrows for hunting to the purpose of killing people, but the number of such victims was very small; among several thousand bodies of the Jomon people so far discovered, less than ten bodies were the victims of homicide.

On thr other hand, the evidence of warfare during the Yayoi Period is quite clear. Defensive settlements appeared, which were surrounded by either moats or defensive walls, or which were located on the hilltops characterized by poor productivity but by excellent command of view. An extensive defensive moat and a watch tower are exemplified by the recent discovery of the Yoshinogari settlement site (dated to the first to third century, A.D.) in Saga Prefecture, western Kyushu Island.

While no homicide tools *per se* in the Jomon Period, there were many kinds made of bronze, iron, and stones used in the Yayoi Period. Among these, the evolution of stone arrowheads in western Japan tends to illustrate this transformation from a peaceful Jomon community to an aggressive Yayoi village. For ten thousand years since the beginning of the Jomon Period, the form of arrowheads was triangular, and the arrowheads weighed less than two grams. The lighter an arrow was, the further and faster the arrow flew. On the other hand, the heavier an arrow, the deeper the arrow could penetrate into the prey's or victim's body. A light arrowhead was well suited for hunting deer and wild boars, which have been representative preys in Japan throughout the prehistory and history. In the second century, B. C. or the phase II Yayoi, a leaf-shaped arrowhead appeared. The majority of this type of arrowheads weighed more than two grams, which was as heavy as a bronze or iron arrowhead, and was better suited for penetration. These leaf-shaped heavy arrowheads were most commonly used in the middle Yayoi Period (phases II, III, and IV; second century, B.C. to first century, A.D.) when stone tools were being replaced by iron tools. These strongly suggest that a stone arrowhead transformed from a hunting tool to a homicide tool in this period.

Archaeologists have also discovered many Yayoi Period tombs for the victims against whom such homicide tools were used or those in which such homicide tools were buried with the

bodies (Does this mean that they had to fight even after their death?). In addition, there is the good possibility that a homicide tool or an object in the form of it was treated as a god or became ritual paraphernalia, which indicates the beginning of prayer for military power.

These four features--defensive settlements, homicide tools, warriors' tombs, and worship for homicide tools[10]--appeared in other parts of Japan and the world as agricultural societies rose[11]. In the Ryukyu Islands, for example, a structure called "*gusuku*" (literally "castle") appeared in A.D. thirteenth century. The *gusuku* were enclosed by earthen walls at the beginning, and later types were surrounded by stone walls. Initially, the construction of the *gusuku* was for religious purposes, but by the fourteenth or fifteenth century, the *gusuku* were defensive structures. This is evident because arrowheads made of iron or bones of dugongs and small iron plates used for armor have been discovered at *gusuku*. I believe that the appearance of defensive structures was closely tied to the beginning of agriculture in the Ryukyu Islands in the tenth or eleventh century. The people started to cultivate rice and wheat and also began to keep cows, horses, and pigs. As the social organization gradually became conplex, there were more social conflicts. In addition, frequent plunder from mainland Japan contributed to the tension on the Islands.

In Hokkaido, defensive structures called *chashi* were built in the fifteenth to eighteenth centuries. The *chashi* were located on hilltops and surrounded by moats or earthe walls. The origins may have been religious, but the defensive nature is obvious because weapons have been excavated at *chashi* sites. At the time the Ainu people in Hokkaido maintained *chashi*, they primarily depended on the food gathering economy; it is rather difficult to argue for the connection of the appearance of *chashi* with agriculture practiced during the earlier Satsumon Period (the late eighth century-fourteenth century, A.D.). It is more reasonable to assume that the custom of fighting and warfare developed as a result of defense against invasions from mainland Japan.

The research into the Yayoi culture characterized by rice cultivation and to a lesser extent warfare is important for us to understand the present situation for many reasons. We know from archaeolofical and historical records that eating rice and rice cultivation have characterized the Japanese people and land for the past 2300 or 2400 years. Unfortunately, there are recent trends in Japan to stay away from rice, such as the national government's decision to reduce the land for rice cultivation and the foreign pressure on opening the Japanese rice market. Such an important issue of whether the Japanese would continue to rely on rice for subsistence or not should not solely be judged in terms of politics and economics. It should be done in the entire cultural and historical contest. As for warfare, archaeological evidence shows that our ancestors began to fight only after they adopted agriculture. In other words, homicide is not our instinct. It is possible for archadologists to reconstruct a history of warfare, which is quite a recent phenomenon in the four million years of human evolution, and the task of us the archaeologists can be to contribute to understanding what has made and still keeps us homicidal[12].

[1] Presented at the International Symposium on Japanese as a Member of the Asian and Pacific Populations at the International Research Center for Japanese Studies on September 28, 1990. Kyoto; drafts for the presentation have been translated from Japanese by Mr. SASAKI Ken'ichi, a doctoral candi-

date at Harvard University. I gratefully acknowledge his assistance.

[2] Centre for Archaeological Operations, Nara National Cultural Properties Research Institute. 2-9-1 Nijo-cho, Nara City 630, Japan

[3] Professor NAKANE Chie commented that my new terminology could also mean the process to go back to the ancient period. I am also aware that Western archaeologists and anthropologists have used the terms "civilizational process," "urban revolution,"and an "state origins," to label similar process, which is taken as an irreversible process. Nonetheless, I still intend to use my term because my concept is based on rather unique situation of the Kofun Period in Japan [ca. 4th to 6th century A.D.]. During the Kofun Period, significant amount of communal labor was directed to put into building an enormous butial mound for just one chief. Yet, other lines of archaeolofical evidence tend to suggest that the Kofun society was not at the level of state. These keep me from using terms such as "civilization" and "state." Since cases similar to that of the Kofun Period Japan may well be discovered in other parts of the world in the future, I want to propose that the concept of "ancientization" be labeled to designate such a stage and process of social evolution, and the process of ancientization should be, like the cases of civilizational peocess, urban revolution, and state origins, irreversible.

[4] "Asia no Kodai Inasaku to Nihon [Early Rice Cultivations in Asia and Japan]." *Toro Iseki to Yayoi Bunka* [Toro Site and the Yayoi Culture]. Shogakukan, Tokyo, 1985, pp. 108-109. (in Japanese)

[5] "Inasaku Gijutsu to Yayoi no Nogyo [Rice Cultivation Method and Agriculture during the Yayoi Period]." *Jomon Yayoi no Seikatsu* [Life during the Jomon abd Yayoi Periods], Vol. 4 of *Nihin no Kodai* [Early Japan]. Chuo-Koron, Tokyo, 1986, pp. 219-350. (in Japanese)

[6] *ibid.*

[7] This section is a revised version of my earlier presentation "Yayoi Culture and the 'Ancientization' of Japan" at the Circum-Pacific Prehistory Conference held at Seattle, Washington, U. S. A. in August 1989. I am greteful to Prof. Fumiko IKAWA-SMITH who introduced my presentation to Dr. George F. MACDONALD. Thus section of my presentation at Kyoto has been benefitted from Dr. MACDONALD's suggestions.

[8] For example, YAMADA Takahaku, "Senshi to Senso [Warriors and War]." *Zukai Sekai Bunka-shi Taikei* [Illustrated Introduction to Culture History of the World], Vol. 2, edited by OKA Masao. Kadokawa, Tokyo, 1960, pp. 185-190. (in Japanese)

[9] See, for example:

MACCONALD, George F. and COVE, John J. (Eds.) *Trade and Warfare; Tsimshian Narratives 2*. Canadian Museum of Civilization, 1987. MACDONALD, George F. *Kitwanga Fort Report*. Canadian Museum of Civilization, 1989.

[10] In addition, Prof. Christy TURNER, II. points out the archaeological evidence of massacre: "Taphonomic Reconstructions of Human Violence and Cannibalism based on Mass-Burials in the American Southwest." *Carnivores, Human Scavengers and Predators: A Questions of Bone Technology*. Proceedins of the Fifteenth Annual Conference, the Archaeological Association of the University of Calgary, 1983, pp. 219-240.

(with TURNER, Jacqueline A.) "Perimortem Damage to Human Skeletal Remains from Wupatki National Monument, Northern Asizona." *Kiva*, Vol. 55 (1990), pp. 187-212.

[11] For the Near East, see: POPER, M. Keyes. "Evidence of Warfare in the Near East from 10,000-4,300 B. C." *War: Its Causes and Cirrekates*, eduted by NETTLESHIP, M., DALEGIVENS, R. and NETTLESHIP, A. (1975), pp. 299-343; for the American Southwest, see: HAAS, Jonathan. "Warfare and the Evolution of Tribal Polities in the Prehistoric Southwest." *The Abthropology of War*, edited by HAAS, J. (1990), pp. 171-189.

[12] In this sense, the following work is also a great conrribution, although no archaeologists participated: FRIED, M. HARRIS, M. and MURPHY, R. (eds.) *War the Anthropology of Armed Conflict and Aggression*. (1968) It is wirthy of note that they ventured to publish this work during the Viet Nam War.

世界の中の弥生文化

佐原　真

食料生産の生活が始まり、富が蓄積されて絶大な権力が生まれる。この過程を「古代化」とよびたい。日本では、弥生時代に稲作農耕社会が成立して六、七百年で巨大な古墳が出現しており、世界的に古代化の実現が速い。

古代化が速かった一因は、すぐ近くに中国・朝鮮半島という手本、かつ脅威があったからだろう。そして、豊かな食料採集民の縄文文化に続いて、弥生文化が成立し、豊かな米に恵まれたからだろう。

弥生水田の規模や弥生遺跡から出土した植物種子の研究から、弥生時代の米の生産量を低いとみる考えもある。しかし、古代化の急速実現、という結果からみれば、弥生人は米を充分にもっていたに違いない。

弥生時代、ブタがいたことが判明した。しかし、日本本土では、9～19世紀という長い間、ブタは欠落した。弥生時代にはニワトリもいた。しかし、ニワトリの肉と卵を食べる食習慣は17世紀以降に普及したものである。こうして食用家畜を欠いた農耕が、日本農業を日本文化をいちじるしく特徴づけることになった。

次に、戦争の始まりをとりあげたい。

食料採集民の争いは小規模かつ形式的であることが多い。人の集団同士がぶつかって大量に殺し合うという意味での戦争は、食料採集民の間では、まれである。北アメリカの北西海岸のシャケを保存食料とした豊かな食料採集民は、そのまれな実例に属する。

東日本の豊かな縄文人たちは、戦争をしなかった。縄文人骨数千体のうち、殺人のあとを留めるのは10人に達さず、しかも木を倒す斧や狩り用の弓矢を凶器に転用した殺人である。縄文人は人を殺傷するための武器は作らなかった。縄文人は、戦争を知らなかった。

それに対して、弥生時代には、戦争があったことを示す証拠がそろっている。1．濠や土壘など防御施設を備えたり、高所に位置したりした防御的集落の存在。2．石器・青銅器・鉄器の各種の武器が豊富。3．武器による犠牲者の墓は、百に近く、武器をそえた墓は百三十例がある。戦士の墓が存在する。4．武器形楽器が発達しており、武力の崇拝が認められる。これらの証拠は、弥生時代こそ本土で戦争が始まったことを示している。農耕がおくれて始まった北海道･沖縄では、戦争の始まりは、十数世紀以降のことであった。

いま、米の歴史･文化を学習すべきときである。人はまた戦争を起こしてしまった。考古学は、この現代的課題にどう役割を果たせるか。